

SOLID-STATE RADIATION IMAGER WITH BACK-SIDE IRRADIATION

ABSTRACT OF THE DISCLOSURE

[0044] A solid-state imager with back-side irradiation. The present invention provides a solid-state imager that includes a substantially radiation transparent substrate adapted to receive incident radiation. The radiation travels through the substrate and a pixelated array of photosensitive elements to a scintillator material, which absorbs the radiation. The pixelated array of photosensitive elements receives light photons and measures the amount of light generated by radiation interactions with the scintillator material. With this imager, there is less spreading and blurring and thus a better quality image. In another embodiment, there is a substantially transparent material disposed between the pixelated array of photosensitive elements and the scintillator material. The substantially transparent material absorbs and substantially blocks electrons from entering the active regions of the pixelated array of photosensitive elements. This enables the imager to perform for a longer period of time according to its specifications.